### HORIBA Scientific

High-performance fiberoptic spectrometer for **OEM** volumes

- **VS7000-PDA Miniature PDA** Spectrometer
- UV-VIS (200-860 nm), VIS (380-750 nm), or UV-NIR (200-1050 nm)
- Colossal full well (100 Me<sup>-</sup> to 1 Ge<sup>-</sup>)
- Low noise (2.6 counts)
- High UV sensitivity
- High throughput (f/2.8)

Feature

- Ultra-low stray light
- Ideal for industrial bright-light applications such as emission, absorbance, reflectance

## **Highest SNR**

**ELEMENTAL ANALYSIS** 

**FLUORESCENCE** GRATINGS & OEM SPECTROMETERS

**OPTICAL COMPONENTS** 

**PARTICLE CHARACTERIZATION** RAMAN

SPECTROSCOPIC ELLIPSOMETRY

SPR IMAGING



Available for OEM customers only

### **Spectroscopy Benefits for OEMs**

Excellent peak symmetry in a miniature grating spectrometer
3.5 ms maximum readout speed
Low noise, Multi-Acq (streaming data through USB for improved speed)
More than 100 times deeper full well than any CCD mini-spectrometer
More than 10 times the S/N of any uncooled CCD mini-spectrometer
Standard connection interfaces to PCs with 100% data integrity
Eliminates second-order interference
Software to integrate VS7000 as an OEM component
Excellent light purity, with concave grating design
Excellent reliability for OEM integration



Concave-grating mini-spectrometer for **UV-VIS** VIS **UV-NIR** 



#### HORIBA

## HORIBA Scientific

#### **VS7000-PDA OEM Mini-Photodiode Array Spectrometer**

Specificat	This VS7000 system for industrial applications uses a modified VS70 optical engine optimized for UV-VIS and a linear photodiode array.
Spectral coverage	UV-VIS (200–860 nm), 250 nm optimized grating, built-in order-sorting filter VIS (380–750 nm), VIS-blazed grating, built-in long-pass filter UV-NIR (200–1050 nm), dual-blaze grating, built-in order-sorting filter
Numerical aperture	f/2.8
Stray-light rejection Typical (Maximum)	0.01% (0.02%) for UV-VIS configuration with 500 μm tall PDA, measured at 700 nm (measured with broad bandpass 510 nm filter, 75 μm slit-width) >2.4 AU linear range (5% variation) with caffeine 273 nm absorption peak in 10 mm cuvette and D <sub>2</sub> lamp.
PDA detector response	High UV sensitivity. Response range from 200 nm to 1000 nm
Detector height Fiber-optic option	500 μm PDA height standard (2.5 mm optional); 600 μm dia., 1.5 m long fiber-optic; or special bundle
Thermoelectric stabilization	None. Dark current and PDA-pattern noise must be subtracted. User must switch off light source or install manual shutter in optical path.
Spectral resolution Pixel resolution Slit (factory configuration)	UV-VIS: 75 μm slit, 1024 pixels, 2.7 nm resolution on 500 μm tall PDA; 0.33 nm/pixel (can be customized for 512 pixels) Available slits: 12-25-37-50-62-75-100-125-150-200 μm (contact us for other gratings)
Improved PDA full well	100 Me <sup>-</sup> (1 Ge <sup>-</sup> optional)
Typical dynamic range	26 000:1
A/D converter	16 bit, 500 kHz
Typical dark current	0.16 count/ms at 20°C (room temperature); typical offset = 300 counts
Typical readout noise	2.6 counts (3900 e <sup>-</sup> ); maximum = 3.5 counts
Readout speed	Multi-acquisition: 3.5 ms; 285 spectra/s Single acquisition: 10 ms; 100 spectra/s (with 0 exposure time)
Typical signal-to-noise ratio	10 000:1
Gain selection	1500 e⁻/count
Dimensions ( $W \times D \times H$ )	4.6" × 4.3" × 2.9" (117 mm × 109 mm × 73.7 mm)
Weight	1.8 lb (0.82 kg)

\*Specifications, form factor, and spectrometer cover subject to change without notice.

Acquisition software included (LabVIEW<sup>™</sup> 2011 only)

- VIs and top-level code are provided for customization
- Handles acquisition and signal-processing (smoothing, absorbance, transmittance, etc.)
- Save data to Excel® or text file
- On-board spectral calibration

No LabVIEW<sup>™</sup> license is needed to run our acquisition software. LabVIEW<sup>™</sup> license ver. 2011 required to edit our code. No code customization supported in price.

#### Gratings and OEM Spectrometers Division info.sci@horiba.com www.horiba.com/VS7000PDA



USA: +1 732 494 8660 UK: +44 (0)20 8204 8142 **Spain:** +34 91 490 23 34 Other Countries: +33 (0)1 64 54 13 00

( VV VALII)

כוואורא

-11010



Italy: +39 0 2 5760 3050 China: +86 (0)10 8567 9966

France: +33 (0)1 64 54 13 00 Germany: +49 (0)89 4623 17-0 +81 (0)3 38618231

# Technology

Japan: Brazil: